

# PENTACON six TL

## On-line users manual

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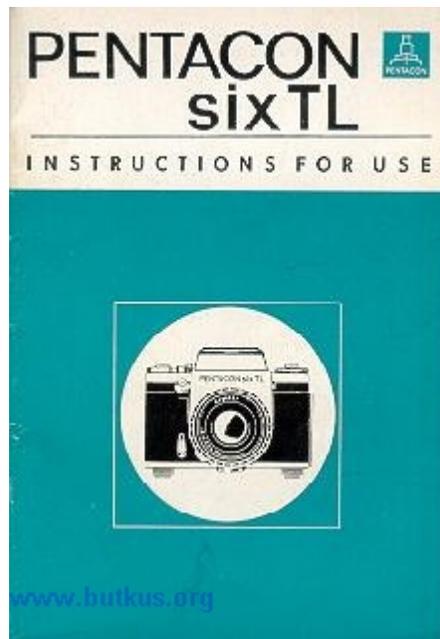
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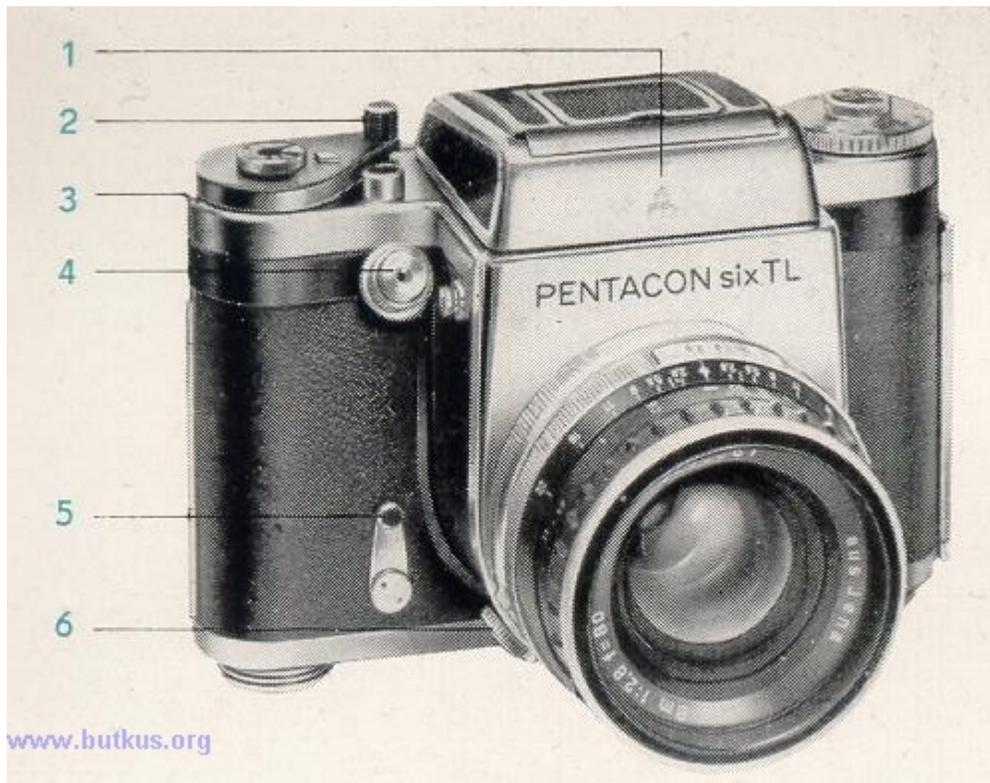
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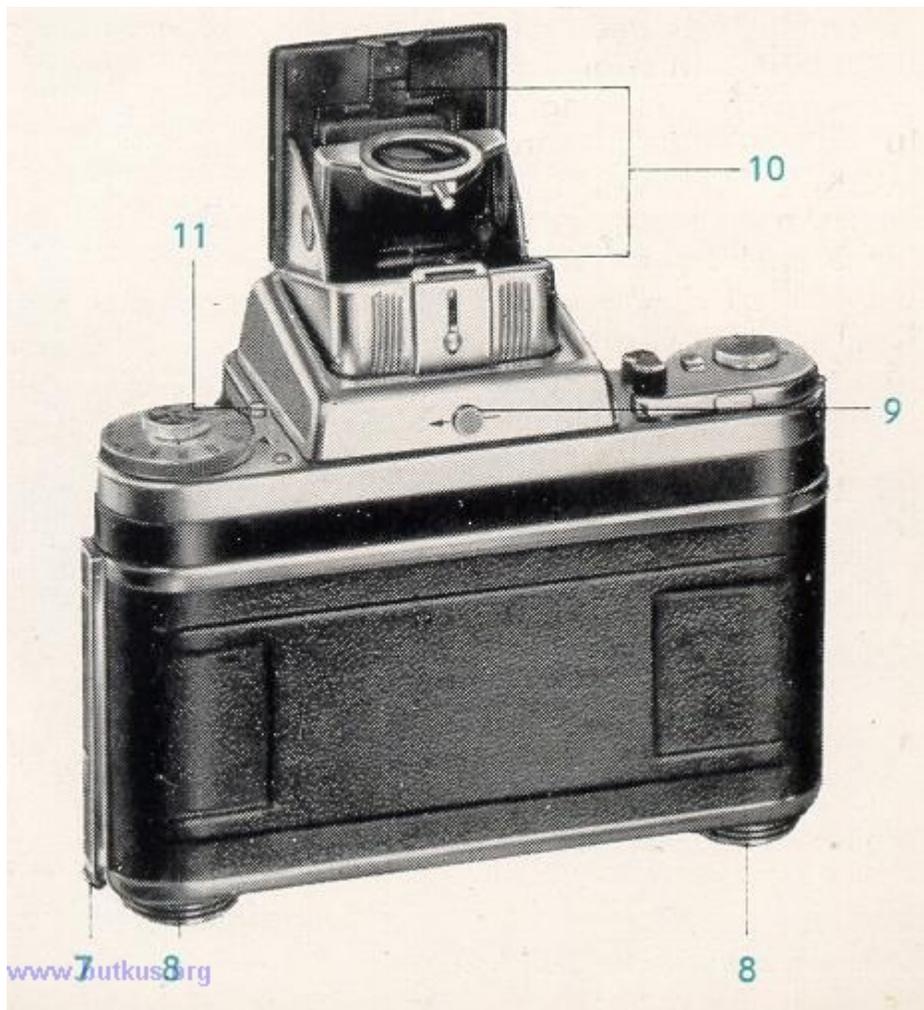
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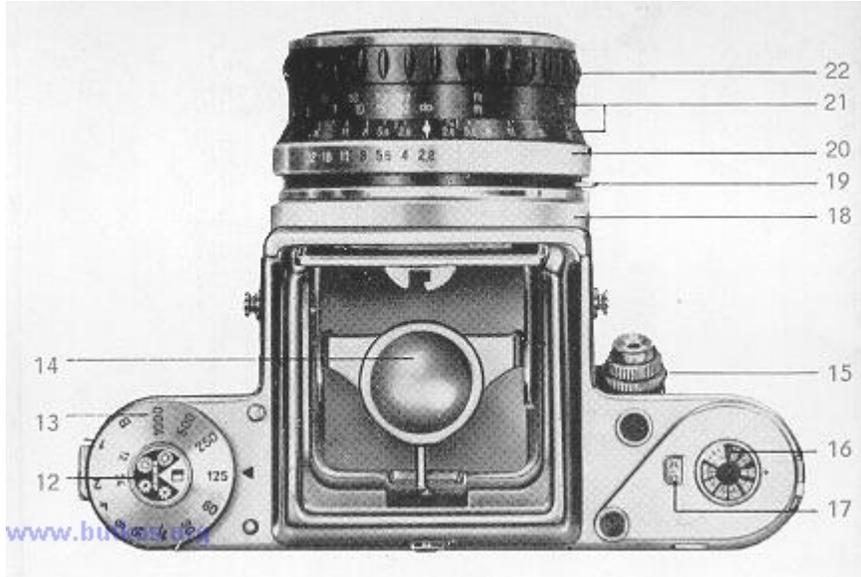
## Important parts of the camera



1. Finder hood
2. Rapid wind lever
3. Disconnecting lever
4. Shutter release
5. Winding lever for delayed-action mechanism
6. Flash socket



7. Latch for camera back
8. Counter support for spool
9. Knob for opening the finder hood
10. Frame finder (sports finder)
11. Knob for unlocking finder hood



- 12. Film type setting dial
- 13. Speed setting dial
- 14. Magnifier lens for focusing
- 15. Locking ring for shutter release
- 16. Film speed setting dial
- 17. Exposure counter
- 18. Milled ring for fixing the lens
- 19. Lever for checking depth of field
- 20. Diaphragm setting ring
- 21. Depth-of-field scale
- 22. Focusing ring



- 18. Milled ring for fixing the lens
- 23. Tripod socket

We are extremely pleased that you have chosen the genuine single lens reflex camera PENTAGON six TL and wish you every success in your photographic activities with this camera.---

The PENTAGON six TL carries on the great tradition of the genuine single lens reflex cameras in the 6 x 6 cm (2 1/4 in. square) format.

Its special features are:

Clearly arranged operating controls, shutter release in anatomically correct position, interchangeable viewfinders (including TTL Prism Attachment) and focusing screens, click stop shutter speed settings from 1 sec. to 1/1000 sec. and B (geometrically graduated), designed for 120 roll film (12 frames) or 220 roll film (24 frames), automatic exposure counter with locking device for the film in use, focal-plane shutter of rubberized material.

X synchronization for electronic flash and bulbs, locking device for flash plug, wide range of accessories for every kind of photographic activity, interchangeable lenses, with bayonet fitting and locking ring, from 50 mm to 1000 mm focal length, up to 180 mm with automatic spring diaphragm.

External view of the camera: Unfold the two inside pages of the front and back covers and look at the camera itself in the same position as it is shown in the pictures of the instruction booklet. The important parts are marked by numbers and explained on the page.

### **Abridged Instructions**

The following Abridged Instructions are a summary of the most important sections of this Instruction Booklet. These sections deserve particular attention. Yet the knowledge acquired by reading them alone cannot compensate for the valuable information to be obtained by studying the complete instruction manual.

1. Pull latch (7) downward and open camera back. Exposure counter (17) jumps to starting point.
2. Place film into left-hand spool chamber.
3. Remove gumstrip pull paper leader across picture gate and push it into longer slit of the receiving spool.
4. Swing rapid wind lever (2) around as far as it will go and continue advancing the film by small rocking movements until the reference mark imprinted on the paper leader stands against the white dot on the picture gate. Now move the rapid wind lever (2) back to its initial position and close the camera back. The short rocking movements of the rapid wind lever may be performed only while the film is being inserted, i.e. as long as the camera back is open, or after the 12th exposure.
5. Set film reminder dials (12 and 16).
6. Release the shutter and cock it again four times. The rapid wind lever must be swung without interruption as far as it will go and moved back. The exposure counter (17) shows the mark for picture 1.
7. Employ viewfinder image for focusing. Critical focusing is performed by means of the magnifying lens.
8. After the 12th and (in case of roll film 220) the 24th exposure, the winding mechanism is locked. It is released by means of disconnecting lever (3), whereupon film transporting can be continued.
9. In case of premature removal the film has to be wound up to the end with the paper trailer by 11 swings of the rapid wind lever and subsequent releasing of the shutter. Short rocking movements of the rapid wind lever must not be performed before the 12th exposure has been made (see also Section 4).

## Inserting and advancing the film

Inserting the film starts with the unlatching and opening of the camera back. Any type of commercially available roll film 120 for 12 exposures 6 x 6 cm (2 1/4 in. square) or roll film 220 for 24 exposures 6 x 6 cm (2 1/4 in. square) may be used in the camera. The film is inserted as follows: Retract the two spool supports (8), rotate them to fixed position, place an empty intact film spool into right-hand spool chamber, making sure that the carrier mechanism catches the spool core, unlock the spool support and let it spring back. The pivot pin will engage in the spool core. The full film spool is inserted into the left-hand spool chamber in exactly the same manner. First swing rapid wind lever (2) around as far as it will go, then continue advancing the paper leader by short rocking movements until the reference mark imprinted on it stands against the white dot on the picture gate. Taut and even winding of the paper leader is necessary to avoid faulty film feed periods. After this, move the rapid wind lever back to its initial position. Close the camera back. It is of special importance to note that the short A rocking movements of the rapid wind lever may be performed only while the film is being inserted, i.e. as long as the camera back is open, or after the 12th exposure.

To achieve faultless advancement of the film, special attention must be paid to the following 3 points:

1. Remove the gumstrip and insert the paper leader carefully into the middle of the spool. It must not brush against either one of the spool flanges (Fig. 1). If this happens, the film will not advance properly. There is even the possibility of the receiving spool getting jammed within the spool chamber because of the irregular winding of the film, and the film transport mechanism might be overstrained on actuation of the cocking lever.

2. The paper leader, when being wound up, must lie tautly on the core of the receiving spool. This can be achieved by slightly suppressing the movement of the full spool on the supply side with the thumb of the left hand (Fig. 2). Make sure that the paper windings are not too loose on the take-up spool (Fig. 3) since this might cause overlapping or excessive spacing between frames. The first exposure could, in such a case, be made before the film is in the picture gate;

3. The short rocking movements of the rapid wind lever when advancing the film, which are mentioned in this instruction booklet, may be performed only under the following conditions:

- a) when the film is being inserted, as long as the camera back is still open, and

- b) after exposure of the 12th frame and subsequent release of the locking device to permit further advancement of the film.

Thus, if for instance a roll film 120 is to be removed from the camera after the 10th exposure, the shutter has to be cocked and released normally up to the 12th frame. Then, when the locking device of the transport mechanism has been released, the film can be wound on to the end by short rocking movements. In this manner you may also advance any 220 roll film after the 13th frame by rocking it to the end.---

## Exposure counter

The exposure counter (17) jumps back to its starting point when the camera back is opened and is automatically set when the camera back is closed. The shutter has to be released and cocked again four times, whereupon the mark for picture 1 will appear in the exposure counter. Do not let the winding lever jump back but move it back smoothly. At every subsequent cocking of the shutter the counting mechanism advances to the next number. After the 12th and, in case of roll film 220, after the 24th exposure, the winding mechanism is locked. It has to be released again by actuation of disconnecting lever (3). The rapid wind lever can then be fully swung around again steadily and without interruption.



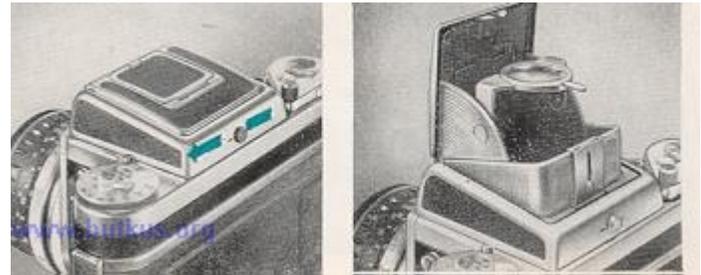
## Film reminder dial

Film reminder dial (12) bearing the symbols for black-and-white and color film, is mounted above the speed setting dial (13). The symbol required is set for roll film 120 against the numeral 12 and for roll film 220 against the numeral 24 on the speed setting dial. A second film reminder dial (16) marking the film speed in DIN and ASA readings is positioned above the rapid wind lever.



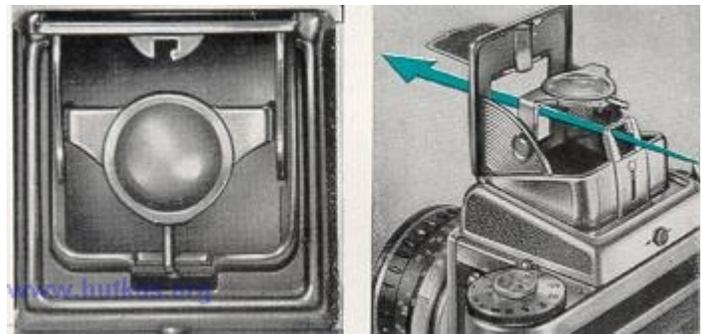
## Finder hood

The finder hood (1) opens and springs into operating position as soon as you push knob (9) in the direction of the arrow. It is closed by finger-tip pressure on the cover. The finder hood is automatically locked on to the camera. To remove it, depress unlocking knob (11) on the camera top. The hood can then be pushed towards the back and lifted off.



## Magnifier- Sports finder

The magnifier in the finder hood is designed for critical focusing | and to facilitate picture composition. The magnifying lens (14) yielding a fourfold enlargement may be swung into position. The magnifier in the finder hood is designed for critical focusing | and to facilitate picture composition. The magnifying lens (14) yielding a fourfold enlargement may be swung into position parallel with the image field lens. The sports finder is moved into working position by lifting the inner part of the finder hood cover and pulling out the frame (10).



## Pentaprism

The Pentaprism permits viewing the image at eye level. It is inserted in place of the finder hood. The reflex image then appears with sides unreversed and enlarged approximately 2.5 times. Persons with faulty eyesight may insert a corrective lens into the eyepiece of the viewfinder to replace their spectacles. You pull the two lateral catches simultaneously towards the back and place the pentaprism on the four connecting pins on top of the camera, then release the catches, and the pentaprism snaps in. Removing the I prism is performed accordingly.

TTL Prism--please refer to „Accessories“.



## Focusing

Focusing takes place with the mirror swung into viewing position, i.e. with the shutter wound up. Rotate focusing ring (22) on the lens mount until the image of the subject appears sharp on the field lens. Distance and definition may also be set by means of the scale on the lens mount, in which case the field lens serves only for determining picture composition. The depth of definition can be read from the focusing ring with the help of depth-of-field scale (21). Engraved on the left and right of the index mark on the depth-of-field scale are diaphragm numerals. At the f/8 setting, for instance, the depth of sharpness can be read from the focusing ring between the two diaphragm numerals "8" on the depth-of-field scale.

III.: Distance 5 m (17 ft.), diaphragm setting f/8, depth of sharpness 3.5 m to approx. 9.5 m = approx. 11 1/2 to 30 ft.

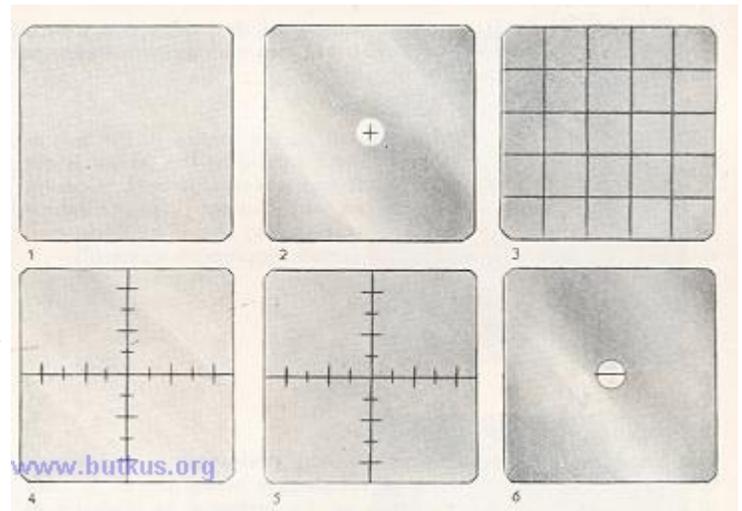
When using the sports finder, focusing has to be performed beforehand, either on the image field lens or by the scale of the focusing ring.



## Image field lenses

7 different image field lenses are available for the PENTAGON six TL (see also the Instruction Booklet describing „Close-up Equipment for PRAKTISIX and PENTAGON six"). The field lenses are exchanged as follows: Remove the finder element from the camera and then loosen the screws on the three retaining springs with a screw driver. Swing the springs aside, take out the spring ring, and tip the image lens out of the camera. Fixing any one of the other field lenses is performed in reverse order. It is important to note that the thinner part of field lenses made of glass must lie towards the back of the camera. Please also note that different supporting angle pieces and spring rings are provided for the Fresnel lens and for the other image field lenses.

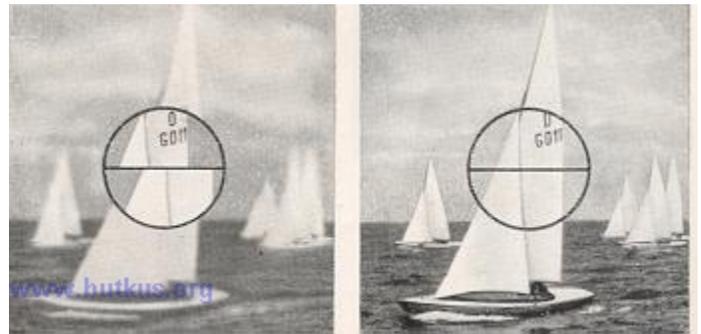
1. Groundglass field lens (Order No. 207250)
2. Groundglass field lens with clear spot and hairline cross (Order No. 207330)
3. Groundglass field lens with reticular guide lines (Order No. 207340)
4. Clear glass field lens with hairline cross, 5 mm reticular (Order No. 207350)
5. Groundglass field lens with hairline cross, 5 mm reticular (Order No. 207360)
6. Groundglass field lens with rangefinder wedges (Order No. 207370)
7. Fresnel lens with microprism screen and Groundglass circle (Order No. 207251)



**Image field lens with rangefinder wedges (rangefinder lens)**

The rangefinder wedges correspond in effect to a split-image rangefinder. The rangefinder lens forms two part images. These are moved towards or away from each other by rotation of focusing ring (22). If the outlines join precisely where the two sections meet, the image is in correct focus. This can be observed best on straight vertical lines.

(7) Fresnel lens (see page 16).



**Fresnel lens with microprism screen**

The PENTAGON six TL can be supplied, as desired either with a Fresnel lens for extra image brightness and microp;ism screen, or with a groundglass image field lens....

1. Focusing on the microprism screen

Correct focusing is achieved as soon as the image in the microprism screen looks clear and free from fuzziness. The image is out of focus if it looks fuzzy or crumbles into screen elements. Focusing is extremely reliable since you see very distinctly the difference between sharpness and unsharpness. Focusing should be performed with the lens aperture wide open (small diaphragm numeral).



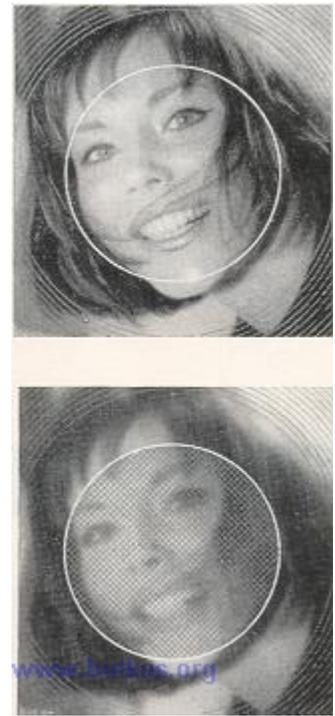
Focusing with the microprism screen

top picture- correct

bottom picture- incorrect

2. Focusing on the groundglass circle

The circular groundglass screen is used preferably in connection with small lens apertures (large diaphragm numerals) or in case of greater scales of reproduction as, for instance, in close-up or macro photography. The remaining section of the viewfinder (Fresnel lens) is not meant for focusing.



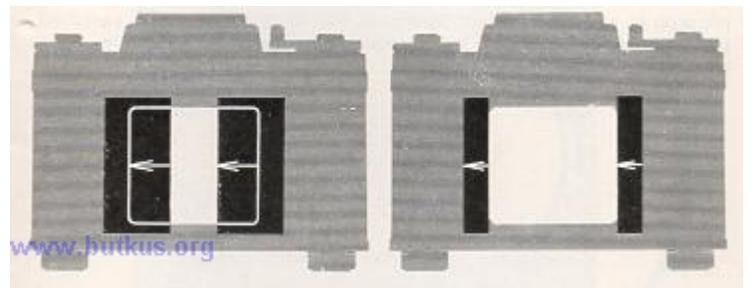
### The diaphragm

The diaphragm is set by rotation of the diaphragm ring (20) on the lens mount. The diaphragm numeral required for the exposure has to be brought to meet the red index mark. Lenses with automatic spring diaphragm allow for full aperture focusing. Not until the shutter is released does the diaphragm close down to the pre-set value. To check the depth of field during focusing, you simply depress lever (19) on the lens mount. This causes the diaphragm to close down to the value preselected by means of setting ring (20).



### The focal-plane shutter

The focal-plane shutter of the PENTAcON six TL gives exposure speeds ranging from 1 sec. to 1/1000 sec. and B (any desired duration). For exposure speeds of longer than 1 sec. it is advisable to use a special wire release with locking device. The speeds are graduated so that each figure indicates double, or one half of the speed marked by the next figure on the scale. The diaphragm scale works analogously. If the light value is to be maintained, the next smaller aperture has to be employed for twice the exposure time, or vice versa.



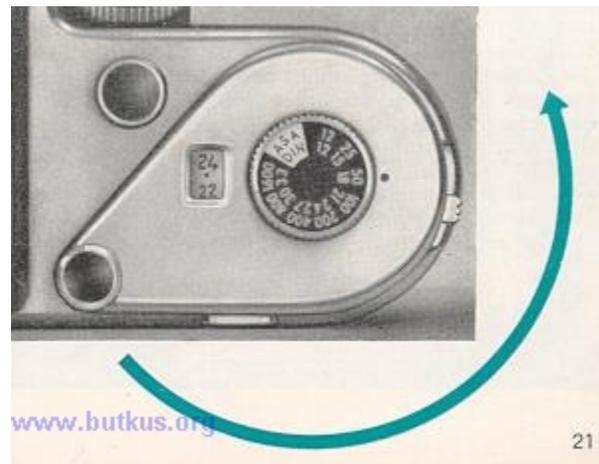
## The exposure speeds

The exposure speeds may be set either before or after the shutter has been cocked. The speed setting dial (13) is rotatable in either direction. The desired exposure speed figure must come to stand against the red triangular mark. The speed settings click in as a safeguard against unintentional displacement.



## Rapid wind lever

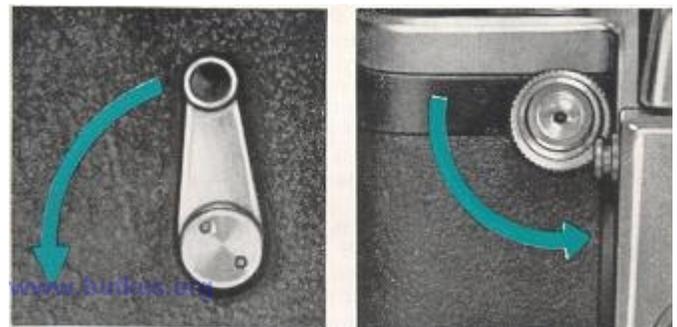
The rapid wind lever serves not only to cock the shutter but simultaneously to transport the film. By this same performance the diaphragm is set to its widest aperture, the exposure counter switched to the next number, and the mirror swung away to allow the light rays to reach the image field lens...



## Delayed-action mechanism- Shutter release

The delayed-action mechanism is tensioned by swinging the winding lever (5) through about 90 degrees and set in motion by actuation of shutter release (4). The shutter must be cocked beforehand. The self-timer runs for approx. 10 seconds. It may be employed with all shutter speeds.

The shutter release is locked by turning the lower milled ring (15) on the release knob (4) anti-clockwise as far as it will go (the red dot must be at the top) Inadvertent tripping of the shutter is thus made impossible. The shutter mechanism is unlocked by turning the milled ring back again.



## Synchronization

Synchronization with electronic flash and flash bulbs is effected by means of the X contact. The flash socket (6) is built into the lower part of the camera front. Clockwise rotation of the milled ring on the flash socket keeps the flash plug locked in position. When inserting or removing the flash plug make sure that the red dot on the milled ring stands opposite the red dot on the front of the flash socket. For the use of electronic flash, the speed setting dial must be moved to the (lighting bolt) setting, for fast-burning bulbs to 1/15 sec., and for bulbs of a longer flash duration to 1/8 sec. For delayed-action exposures the shutter release has to be depressed until the flash lights up. (Use cable release with locking device). The correct diaphragm setting is found by dividing the guide number of the flash by the flash-to-subject distance figure.



## Removing the film

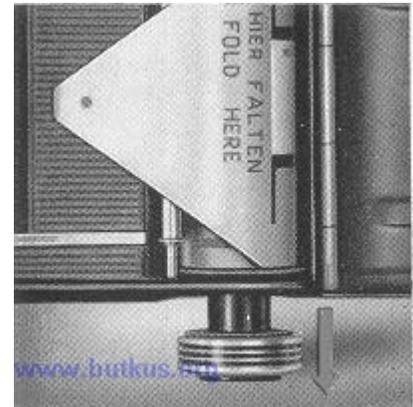
Remove the film after exposing the 12th frame (on film 120) or the 24th frame (on film 220) and subsequently winding up the paper trailer. To achieve this, first actuate disconnecting lever (3) and then cock the rapid wind lever with full 11 swings followed by release of the shutter, or carry out short rocking movements, until the winding of the lever becomes noticeably easier.

This means that if a roll film 120 is to be removed from the camera after the 10th exposure, the shutter has to be normally cocked and released up to the 12th frame.

Then, when the locking device of the transport mechanism has been released, the film can be wound on to the end by short rocking movements. In this manner you may also advance any 220 roll film after the 13th frame by rocking it to the end.

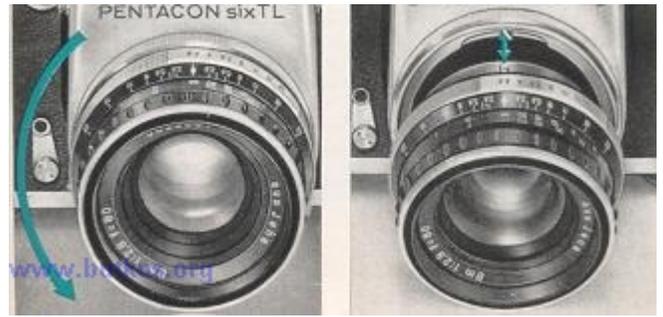
Now open the camera back, pull out the spool support and lock it in position. Tip the spool with the exposed film into your hand and fasten the paper trailer with the gumstrip. Should the camera be firmly connected to any other equipment the film spool can also be removed by means of its lower flange.

In this case, the spool must still be resting against the upper part of the spool chamber, i.e. engaged by the carrier mechanism.



## Exchanging lenses

Exchanging lenses is a quick and simple matter. Turn milled ring ( 18) of the bayonet fitting anti-clockwise (as seen from the front) until it stops and remove the lens from the camera. The red mark on the scale of the lens to be inserted must be at the top, and the screw, or pin, on the inner edge of the lens mount has to engage in the recess in the lens seat of the camera (see illustration). To fasten the lens tighten milled ring (18) by clockwise movement (as seen from the front).



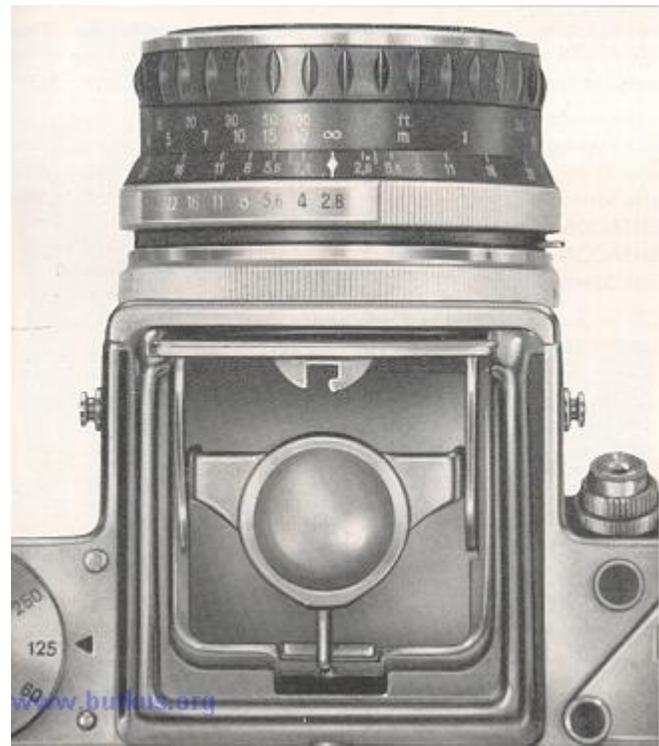
## Lenses

The standard lens, Zeiss Biometar 80mm f/2.8 is equipped with automatic spring diaphragm control (ASD). No specific handling of the lens is necessary except setting the aperture required for the exposure. The diaphragm is automatically controlled by the camera. During the focusing procedure it is completely open

**Supplementary lenses with automatic diaphragm** are operated in the same manner as described above for standard lenses. This applies both to setting the diaphragm stop and to checking the depth of field.---

### **Supplementary lenses without automatic diaphragm**

(e.g. PENTAGON 300 mm f/4 with manual pre-set diaphragm) are set by pressing the setting ring directly behind the diaphragm scale towards the back and adjusting it to bring its mark against the desired diaphragm numeral, where it clicks in. This makes it possible also with these lenses to focus at full aperture. Immediately before making the exposure, you turn the diaphragm ring back to the preselected stop.



With lenses of a longer focal length (exceeding 300 mm) the automatic diaphragm lever in the camera may project into the path of rays and can, therefore, be moved away from its normal working position towards the camera body. To achieve this, remove the lens from the camera and swing the lever, which becomes visible on the left inside the opening, just far enough that it will not touch the camera body when the shutter is cocked. Swing the lever back into operating position when lenses with automatic diaphragm are to be used.

## Interchangeable lenses

The following interchangeable lenses are available for the PENTACON six TL:

Standard lens Zeiss Biometar 80 mm f/2.8 ASD

Supplementary lenses:

Zeiss Flektogon 50 mm f/4 ASD

Zeiss Biometar 120 mm f/2.8 ASD

Zeiss Sonnar 180 mm f/2.8 ASD

PENTAGON (Orestegor) \* 300 mm f/4 PD

PENTAGON (Orestegor) \* 500 mm f/5.6 PD

Zeiss Spiegelobjektiv (Mirror Lens) 1000 mm f/5.6

ASD = automatic spring diaphragm

PD = pre-set diaphragm

\* The lenses hitherto listed under the name of Meyer Optics no bear the trade name PENTACON.



## Accessories for the PENTACON six TL

### TTL Prism Attachment

An outstanding advantage of the PENTAGON six TL is its ability to accept the TTL Prism Attachment which can be used instead of the finder hood or the ordinary pentaprism. It enables partially integral light metering to be performed, based on the modern, technically accurate internal measuring system. All factors making any difference with regard to the exposure are automatically taken into account. Correction of exposure values as, for instance, in close-up work or with filters, is no longer necessary.---

For further information please refer to our brochures and to the instructions for using the TTL Prism Attachment.



### Equipment for close-up work

Set of Intermediate Rings

Set of Intermediate Rings with Plunger

10 mm Intermediate Ring with Plunger

Close-up Bellows Attachment

Reversing Tube

Special Intermediate Ring with Cable Release Connection

Double Cable Release

Special Image Field Lenses

Focusing Magnifier

For further details please refer to our brochures and to the instructions for using "Close-up Equipment for PENTACON six and PRAKTISIX."

The following accessories may be attached to the eyepiece of the pentaprism and of the TTL Prism Attachment:

Eye Cup  
Focusing Telescope  
Angle Finder  
Mount for corrective lenses  
Attachable Accessory Shoe

For further details please refer to our brochures and to the instructions for using "Eyepiece Attachments".

Special Pressure Plate for the use of photographic glass plates  
Focusing Side  
Universal Tripod  
Filters  
Lens - Hoods  
Cable Releases

One final hint with regard to setting up the camera on a flat surface. A screw (Order Number 223650) to be threaded into the tripod socket of the camera may be used as a third supporting

The details given in this booklet are subject to slight alterations which may result from further development in the manufacturing Process.

Please read these Instructions for Use carefully, since we can accept no liability for damage caused by improper handling of the camera.

### Accessories for the connection to the eyepiece

